

# CLAIMS

1. A digital transcoding system for receiving data bit streams with a first bit rate (R1) and outputting a data bit stream with a second bit rate (R2), which differs from the first bit rate (R1) and in particular is reduced relative thereto, comprising on its input side a decoding device (10), which has an input buffer (11) and a series-connected VLD decoder (12), also, on its output side, a coding device (20), which has a series circuit consisting of a quantizer (21) for requantizing with a requantization factor the data that have been dequantized in the decoding device (10), a subsequent VLC coder (22), and an output buffer (23), wherein to adjust the second bit rate (R2), the new DCT coefficients  $QF_{new}$ , which are to be conducted to the VLC coder (22), are determined with reference to macro-blocks, in accordance with the following formula:

$$QF_{new}[\nu][u] = QF_{old}[\nu][u] \cdot \frac{qs_{old}}{qs_{new}},$$

where  $qs_{old}$  stands for the old quantization factors, and  $qs_{new}$  for the new ones, and where  $QF_{old}$  stands for the DCT coefficients at the output of the VLD decoder (12).

2. The digital transcoder system of claim 1, wherein the value  $QS_{new}$  can be adjusted manually or by a control algorithm

3. The digital transcoder system of claim 1, wherein the value of the requantization factor  $qs_{new}$  is determined, with reference to macro-blocks, in according with the following requantization

3 formula:

$$qs_{new}[i] = S \cdot \left( (1 - R) \frac{r^{in}}{r^{out}} qs_{old}[i] + R \cdot A \right),$$

4 where S, A, and R are prescribed correction factors,  $r^{in}$  is the determined bit rate of the received data  
5 bit stream (R1), and  $r^{out}$  is the desired output bit rate (R2) of the transcoded data bit stream.

1 4. The digital transcoder system of claim 1 comprising a common stage (40) with a multiplier  
2 (41), which receives the value  $QF_{old}$  from the VLD decoder (12) and also the quotient  $qs_{old}/qs_{new}$ , and  
3 in that the output of the multiplier (41) is connected, via a float-/integer-stage (42) to the input of the  
VLC coder (22).

5. The digital transcoder system of claim 4, wherein the value  $qs_{old}$  is determined from the input  
data stream (R1).

6. The digital transcoder system of claim 5, wherein the VLC coder (22) inserts the unchanged  
motion data from the input data bit stream (R1) into the transcoded bit stream.

1 7. The digital transcoder system of claim 6, comprising a device (51) for determining a target  
2 data quantity (j) per picture or per reference object, and in that this device (51) is connected to a  
3 scene section detection device (55), which detects scene sections in the picture, and an average value  
4 for the requantization factors of a previous picture of the same picture type, and a value for the

5 number of bits that were generated in the transcoding of the immediately preceding picture are  
6 inputted as further control variables. [sic]

1 8. The digital transcoder system of claim 7, wherein the requantization factor  $qs_{new}$  can also be  
2 changed in terms of the number of macro-blocks per received picture and in terms of the picture  
3 refresh frequency in the received data bit stream.

1 9. The digital transcoder system of claim 8, comprising a monitoring device (56) to monitor  
2 overflow or underflow of a VBV memory (57).

1 10. The digital transcoder system of claim 9, wherein the second bit rate (R2) is set constant  
2 independent of a variability of the first bit rate (R1).